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DOMESTIC

ECONOMY

FOR SCHOOLS

F. Milner Fothergill M. D.

William Lock M.D.
July 1888.



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DOMESTIC ECONOMY

FOR SCHOOLS

IN THREE PARTS, COMPLETE



BY

J. MILNER FOTHERGILL, M.D.

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TO
HIS DEAR WIFE

This Little Work

IS

AFFECTIONATELY DEDICATED

BY

THE AUTHOR.

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DOMESTIC ECONOMY.—PART I.

SECTION I.—CLOTHING AND WASHING.

CHAPTER I.—CLOTHING.

THESE are two very hard words for little girls. The first word, "*domestic*," is derived from the Latin word *domus*, a house, and means "of" or "related to" the house in which we live. The second word, *economy*, is made from two Greek words, and means the laws of the management of a house. So, then, we are to learn how to conduct with true thrift the management of the house in which we live. "House-thrift" is "domestic economy."

This is not so simple a matter as seems too often taken for granted. All women, young and old, desire to make their money go as far as possible; but they do not always know how to lay it out wisely, because they do not truly know what they ought to buy, or what will best serve their end.

Now the first matter to which we have to attend is that of "clothing." Clothes are worn for two reasons: (1) decency, and (2) warmth. It might be added, to some extent also, for the purposes of ornament. Now every girl, as well as every woman, should always look as nice as she knows how to make herself. Clothing should be neat and clean ever; nicely trimmed when possible. Fine clothes over dirt look worse than plain clothes would. Clean under-clothing should alone

be worn ; dirty under-clothing is unhealthy as well as unsightly.

It is not necessary here to say much about clothes being worn for the purposes of decency ; every little girl is taught to be decent. However carelessly she may be brought up, that is never forgotten.

But, about the use of clothes for the purpose of warmth, something may be said that will be useful. Clothes keep in the heat of the body, so that it is not lost. The body produces so much heat of its own, that it is warm when all around is cold. But if clothes were not worn in cold weather, or cold climates, the body would lose its heat, and soon become so cold that it would die. In the very cold countries of Greenland and Lapland the people wear furs to keep them warm ; furs being the warmest of all the materials used for making clothes. In very hot countries, as in Central Africa, clothes are only required to cover the trunk, the limbs being left bare ; that is, they are only worn for decency. A slight cotton garment is all that is worn there.

For warmth it is needful to wear more clothes in winter than in summer ; also they should consist of warmer material. Now what do we mean by "warmer material" ? If we touch a blanket in cold weather it feels warm. If we feel a linen shirt at the same time it feels cold. They are both of the same heat, or coldness ; but one feels warm, the other feels cold. The one draws away more heat from the hand, and therefore makes the

hand cold ; or, as we say, “feels” cold. The proper phrase for this is to say it “conducts heat.” Thus linen “conducts heat” more quickly than does wool ; and so feels cold to the touch when the blanket feels warm. Wool “conducts heat” badly, and so does not draw it away from the hand, or very slowly ; and thus it “feels” warm. The material which conducts heat most quickly of all our clothing fabrics is “linen.”

Linen is a vegetable material, and consists of the fibres of a plant, of which the seed is “linseed.” It is strong, and tougher than cotton, and so the best sheets were made of it ; but it is so “cold” that now cotton sheets are mostly used. Linen night-dresses are still worn by some. But for those who do not possess plenty of bed-clothes cotton night-clothing is much better, as being “warmer.” Even now linen is little worn for day clothes. Linen “fronts” are put into cotton shirts, because linen looks nicer than cotton ; “gets up” better, as the laundress would say. So linen wristbands and linen collars are worn. Linen is also used for handkerchiefs. Linen rags are useful to bind up cuts and wounds ; so worn-out linen things should always be put by against accidents.

Cotton “conducts heat” less quickly than linen, and so is more largely worn for clothing material. It is the packing round the seeds in the pod of the cotton plant, and requires to be carefully picked as the pods burst. The people of Africa, India, China, Central America, and other hot climates are clad in cotton, which is at once cool

and cheap. The looms of Lancashire spin the material for the clothes of a large portion of the world—the sole clothing in hot countries, the under-clothing of temperate countries. Cotton materials wash well, and so cotton dresses are much worn by indoor servants, and also by ladies for morning wear. Even for outdoor dresses cotton fabrics are now much worn in summer.

Thus we see the cooler materials for our clothes are products of the vegetable world. The warmer materials are procured from animals.

CHAPTER II.—CLOTHING—*continued*.

SILK is the production of the silkworm, a sort of caterpillar. It is very fine in the thread, very tough, and very durable; but very costly. It is a slow conductor of heat, and so is suitable for under-clothing for those who can afford it. Silk stockings are not uncommon; but silk is usually worn for dresses, ribbons, handkerchiefs, gloves, crapes, and fringe, on account of its beauty, and because it wears well. It also washes well.

Wool is the covering of certain animals, especially the sheep. It is warm and lasting, but is not suited for clothes which require washing often. We use woollen blankets for our beds because the nights are colder than the days. Woollen under-clothing is also worn next the skin in cold weather, especially by weak and delicate persons. The wool of the merino sheep is finer than ordinary wool; so it is used for thin woollen under-garments. Our

outer garments are made largely of wool, especially in winter. Men wear woollen clothes mainly for their coats, waistcoats, and trousers; though cotton is used by workmen for blouses, for fustian coats, and corduroy trousers. Such clothes are cheap, lasting, and wash readily, and therefore are suited for dirty work. Women wear woollen stuffs as winter dresses, petticoats, and shawls. Men wear woollen drawers, but only delicate girls wear flannel drawers with us; though in cold countries women should also wear drawers made of woollen material. Worsted stockings for both sexes are made of wool. For overcoats and ulsters thick woollen materials are used. Woollen stuffs do not wash well unless very thin, or of loose or knitted material; but they are readily cleaned by a brush, which will remove dirt, but not stains. For common wear woollen goods are usually dark in colour.

Wool differs from hair in that its surface is rough, and so it will spin and work into cloth, which hair will not. In its finer forms we have merino and alpaca. Some sorts of hair are used for thick materials, as rugs: thus goat's hair is made into Cashmere shawls and other fabrics; while the hair of the camel is made into tent-cloths by the Turcomans and other Eastern peoples. Hair is also used for the making of felt goods, as hats, petticoats, and men's dressing-gowns.

Carpets are made of worsted or wool, especially the best, as Turkish, Brussels, and English carpets, notably Kidderminster. Common carpets are made

of felt. A coarse material for mats or covering for office-floors, known as "matting," is made from the fibre of the cocoa-nut.

The skins of animals are used either with the hair or fur attached, or without the hair, as leather.

Leather is a very slow conductor of heat. It is prepared in several ways, and as *tanned* leather is stout and firm, and is made into boots and shoes. It is also made into gloves. As chamois, or wash-leather, it is made into vests for invalids and delicate persons.

Furs are very warm, indeed the warmest of all clothing materials. The Esquimaux are clad in fur from top to toe, to enable them to withstand the severity of an Arctic climate. Many wild animals are hunted for their skins, which vary in the length and thickness of the hair attached to the skin. In Eastern Europe and in the Steppes of Asia the robe usually worn is a sheep's skin with the warm wool inside in winter, and the cooler leather inside in summer.

As furs are only adapted for winter wear, it is a matter of moment to preserve them during the summer. The moth is fond of woollen and fur, and its grub is very destructive to both these materials. As furs are costly, great care is needed to prevent the ravages of the moth-grub. So it is found good to wrap them carefully up in brown paper, and to place a piece of camphor in with them. By such means they are well preserved. Furs, when well taken care of, last for many years.

Feathers are also very warm; they are but

little used for day clothes, but are used largely for bed-clothes; the eider-down coverlet is at once very warm and very light.

Now come a few remarks on the wearing of clothes. The nights being colder than the days, we require thicker and warmer coverings for night wear than are required for day wear. The lighter the bed-clothes the better; but warm they must be. It used to be the custom to sleep in blankets, but now a cotton sheet is usual. But sheets are not so warm as blankets, though more easily washed. It is usual to have a sheet next the body, then one or more blankets, and then a coverlet; the last being of feathers where the means will afford it, of cotton where the means are such as to call for thrift. Feather-beds are warm, but hair mattresses are generally to be preferred. The bed-clothes should be thrown off and the bed exposed to the air when the sleeper gets up, so as to keep it pure and sweet.

For day clothes it is well to wear flannel or some woollen garment next the skin, a matter often neglected by women, who are more careless in this respect than men. Delicate girls should not only wear a woollen garment next the skin in the day, but might even wear flannel night-dresses in cold weather. Then comes the calico chemise, and over it a corset, which should not be too tight. Tight corsets are injurious to the liver and other internal organs. It is customary to wear a flannel petticoat in cold weather to keep the legs warm. Flannel drawers ought also to be worn in cold

weather, or merino drawers, under the ordinary white drawers commonly worn. Outside garments should consist of woollen material for winter ; but in very hot weather a cotton dress, that will wash, may be worn. Alpaca dresses are cool and wear very well.

Gloves of various materials are worn, partly for warmth, partly for ornament ; they also keep the hands clean. Boots and shoes protect the feet from injury, as well as keep them warm. Cheap boots and shoes are "bad economy;" they wear very badly and let in damp. After being wet, boots and shoes should always be thoroughly dried. A warm sole in the boot or shoe is often very comfortable, especially for those girls who have cold feet. It is well to have a change of boots and shoes, and not to wear the same pair two days together if it can be avoided. Clothes need to be washed and mended with pains and patience ; which brings us to the subject of Washing and Darning.

CHAPTER III.—WASHING.—GENERAL HINTS.

THERE is, perhaps, no more unpleasant day in most homes than the "Washing-day." It is the day upon which children willingly stay at school to dinner ; mothers get tired, and, perhaps, sometimes cross ; and fathers hurry away from their meals to escape from the smell of the copper, and the discomfort of the room. In a very few years, you who are school-girls will leave school to become mothers' helps ; and by-and-by, maybe, have homes of your own ; you will then have

to face the difficulty of “washing-day.” I want you to learn, now, how to free it from much of its needless unpleasantness.

In small houses, and amongst the poor, it is generally needful to wash once a week, for these reasons—first, because it is not nice to keep many dirty clothes, for even a fortnight, in a small house every room of which is occupied; secondly, because poor people have seldom a sufficient stock of clothes to allow of a less frequent wash; thirdly, because if under-clothing be allowed to be dirty for any length of time it acquires a yellow tinge very difficult to remove. Now, in order to render the work of “washing-day” more easy and pleasant, you will do well to keep in mind three things, viz., *Regularity*, *Previous Preparation*, and *Good Methods*.

1. Regularity.—A good manager will wash early in the week, and upon the same day in each week. A set time for work is a great help towards its being well done. None but slovens will, as a rule, wash at the latter end of the week. I do not forget that many mothers amongst the poor go out to work several days in the week, that they cannot choose their days, and that they must therefore do their home work when they can. Yet, with forethought and good management, even they may find some time better than Saturday evening in which to do their washing. When they can choose their own time, Tuesday is a better day for washing than Monday; because it enables them to attend to the second point of importance.

2. Previous Preparation.—It is this preparation which so much lightens the work of washing-day. The first step will be to sort, or arrange, the articles to be washed, in sets; putting in one place such things as may be washed together without injury to any of them. This step, important as it is, is frequently neglected by young beginners or careless women, and the result is, confusion on the washing-day and injury to the clothes.

Where there are fine laces and muslins they must form one set, for they require very careful washing. Cuffs, collars, and fine white garments, especially shirts, must make a second set; as they also need much care. Flannels should be put aside by themselves, for, like print articles such as aprons and gowns, they must be washed separately. Underclothes and table-linen should be put together in one set, and coarse dirty articles, such as kitchen towels, in another. Thus you have six separate sets. By such sorting, not only will each garment get the attention it needs, but there will be a saving of water; for that in which the finest articles have been washed will do for heavier and rougher things.

The second step will be to “put in soak,” as it is termed, all garments soiled in any special way, as, for instance, underclothes marked with perspiration, as well as dirty kitchen towels. This must be done not later than the day before washing-day. You see, now, why I said Tuesday rather than Monday; for though you might very well “sort” on Saturday, it would not be well to leave the garments in “soak” from Saturday to Monday.

Try to get rain water for washing purposes if you can. The water laid on in our houses is too "hard" for washing purposes. If, however, you are obliged to use it, you must soften it by adding soda or washing-powder, and then boiling it. Remember, it must be in such "soft" water you soak your garments. Rub soap on the soiled parts, such as wristbands and collars, and on grease or other spots, and leave the articles covered with water. A moderate amount of time and trouble will bring the dirt out the next day, because the soap and water will have softened the spots. "It takes such a quantity of hot water the next morning," said a girl, who made her first attempt at the family wash during the illness of her mother. Her want of experience had led her to pour the hot water over the soaked clothes just as they were, instead of wringing them out first, and pouring away the cold and dirty water.

The last step in preparation is to set in readiness the various utensils and materials required on washing-day, in order to avoid confusion and waste of time. See, then, that the washing-tubs do not leak; that the clothes-lines, pegs, and baskets are clean; that the "blue bag" is filled, and the soap, soda, or washing-powder—whichever you prefer to use—is at hand. If, as should always be the case, the copper be well washed and dried after every time it is used, it will need no other attention; yet it is well always to make sure that it is ready.

3. Good Methods.—The first, and perhaps the

most important, matter is to "get up early." If you wait until ten o'clock in the day, evening will find you still at the wash-tub. A yard full of clothes at breakfast-time suggests a clear wash-house at dinner-time. Two or three hours in the early morning are worth twice the number in the latter part of the day. "But I feel so faint if I wash before breakfast," says some one, not, perhaps, very strong. Well, I do not want you to feel faint ; you can do no good work in that state ; but you can avoid it by having a good slice of bread-and-butter and a drink of milk before beginning work.

No doubt you have often seen advertisements highly recommending washing machines. They are used instead of the old-fashioned "dolly," which may still be in use with some of your mothers. By its strong and rapid movements the machine gets the dirt out of the clothes much more quickly than a woman can with her hands. Do not, however, imagine, as some of the advertisements assert, that washing-machines do away with all trouble or labour on the part of the washerwoman. A great deal of arm-work is needed to turn the handle of the machine. If you can afford a really good machine, I should advise you to buy one ; but it is of little use to buy a common one which will soon get out of order and injure the clothes.

CHAPTER IV.—WASHING-DAY.

THE first thing to do in starting work on washing-day is to half fill the copper and light the fire.

While the water is heating you can wring out the soaked clothes. When the water in the copper boils take out some for the flannels, and to the rest add soda and soap in small pieces. Nearly fill up the copper with clothes and cold water and let all boil.

Flannels need a nice lather for washing, and to make this you must dissolve soap in the proportion of one and a half pound to a gallon of water. Always cut up soap for dissolving into shavings or small pieces, else you will have a long while to wait for the lather. Cool the water for flannels just enough to prevent it hurting your hands. Be very careful never to put soda to flannels, or you will entirely ruin them. There is no material more commonly spoiled in the wash than flannel. In order to keep it soft, woolly, and pliant, it must be moved about in the water, "swished," as some country folks say, instead of being rubbed; then squeezed (in two waters) and rinsed in warm water; after that well shaken and dried quickly. So treated, flannel garments keep their nice look and "feel" to the last. The water in which the flannels are rinsed answers for prints, because they, too, must neither be put in soda water nor boiled; though they may be rubbed, wrung, and rinsed in cold water. I dare say you know how often the colours fade and run into each other when prints are washed. In common prints this cannot be avoided, so never buy inferior prints. Prints, like flannels, need to be dried quickly; so take care to wash them when your lines will be free. It is better to begin the day with prints and flannels,

because the other things which must be boiled will take some time before they are ready for the lines.

When speaking of sorting I said muslin and laees needed very eareful washing. They are so fine and delieate that any rough usage results in large holes. You frequently hear people say, "Oh, laee looks nothing after it is washed." But why? Simply for want of eare. It is a good plan either to taek several thieknesses together, or else to taek the laees separately on a bottle eovered with a elean white eloth. Do not rub or wring them. You know how to avoid that if you remember what I said about flannels. An old pieee of muslin will make a niee bag in whieh to put the laees when ready for boiling, that is, with the first lot of eloths. This will eonsist of linen eollars, cuffs, and shirts. Search out all the dirty marks, now well loosened by soaking, and after washing in two waters, these things will be ready for the copper. "I ean't think why these marks have not eome out; I rubbed them and boiled them," said a young servant to her mistress. "Did the eopper boil when you put them in?" asked the lady. "Oh yes, ma'am," replied the girl. "Ah!" said her mistress, "the boiling water has fixed the marks, and I doubt if you will ever get them out now." So you see the eopper must be eool when putting in the eloths.

During the half-hour this set is boiling you can get ready another lot of eloths, leaving the dirty eoarse things to the last. You will generally need

to add more soap and soda to the copper before putting in the fresh set of clothes.

When the things are boiled enough, take them out with a stick on to the lid of the copper, and let some of the water drain from them back into the copper. If you can, put them in a tub under a running tap ; at any rate, use plenty of water, and move them about to get rid of the soap and soda. If this is not done the clothes have an unpleasant smell, and are a bad colour when dry. The last process will be to rinse them in cold "blue-water." Take care not to let them lie long in this, or the blue will settle on the clothes in patches. When you have wrung them thoroughly they are ready for drying.

CHAPTER V.—WASHING INFECTED GARMENTS.

YOU all must understand the necessity for thoroughly and frequently washing under-linen. But if this is necessary when the wearer is in health, it becomes much more so when the garments have been worn, or in any way used, by patients suffering from *infectious* or *contagious* diseases. There are many ways by which such dangerous diseases as scarlet fever and small-pox may be spread ; but there is no more sure way than by want of care in dealing with the bed linen and under-clothing of the sick persons.

It is one of the duties of a sick-room nurse to remove soiled clothing, &c., from the room as quickly as possible. These things must not be put

into the clothes-bag to wait for the weekly wash. They must be washed at once, and by themselves, after being placed in water containing some good *disinfectant*, such as the well-known *carbolic acid*, of which a tablespoonful should be added to every gallon of water used, and in this they should soak thoroughly. If time allows, by all means also boil these clothes. It would be better to suffer the loss of colour in some articles than not to cleanse them thoroughly. A good blow in the open air will complete the precautions needed in cleaning these things. It is better not to put them into the ordinary stock of household linen, but keep them for the further use of the patient or patients. Infection is so subtle in its nature, and often so easily conveyed, that we cannot be too careful.

It is not only in dealing with clothes in case of such serious and often fatal diseases as those already mentioned that care is necessary. Ring-worm, and other skin diseases, especially that disagreeable one known as "itch," are very easily caught by coming into contact with affected persons. Hence, as you know, if a child show any sign of being thus affected, she is at once sent away from school, and not allowed to return until quite recovered. But I am afraid sisters and brothers are not so careful as they should be in this matter. They use the same towel, comb, or brush, and then, probably, the disease spreads through the family. It is sometimes want of thought, sometimes want of knowledge, and sometimes laziness, or unwillingness to

take a little extra trouble, that causes people to neglect these necessary precautions. I hope elder girls will endeavour not only to take care for themselves, but also to try and influence in a quiet way their younger brothers and sisters, in these matters.

CHAPTER VI.—FOLDING, STARCHING, IRONING.

AS soon as the clothes are dry they must be taken down from the line, put into a clean basket, and carried in to be folded. Do not throw the pegs on the ground, nor leave the lines up, or your work will be increased on the next washing-day. Keep a strong bag in which to put away pegs and lines.

Folding should be done, if possible, the same day as the washing. If the things are quite dry they must be sprinkled with clean water before folding. They should lie for several hours before they are mangled. Now you see why I want you to fold them over-night. Then they can be mangled the next morning. Large articles, such as sheets and tablecloths, are best folded by two persons. Let the folds run parallel with the selvages. Small and large articles should not be mangled together, or the small ones will be only imperfectly done. Bed and table linen only need airing after they are mangled. Body linen requires ironing as well. Woollen articles need neither mangling nor ironing.

Starching is wanted for linen collars and cuffs,

for white petticoats, for the front, cuffs, and collars of white shirts, and for all muslins and laces. Starch is made by mixing one tablespoonful of starch with one tablespoonful of cold water into a smooth paste, and adding to it a pint of boiling water. Keep it covered until it is needed for use, or a skin will form over it. A little borax or wax melted in it will prevent its sticking to the iron afterwards. Linen articles must be starched *first*, as they require to be made stiff. More water may then be added to the starch before the muslins and laces are put in. Take care to squeeze out all the starch you can; shake the garment, roll it up tightly, and let it lie several hours. You see now it is well for you to do your starching over-night. It might well follow the folding. Muslins and laces should be "clapped" between the hands before rolling up, as you want them to be very clear.

Ironing is intended to make the articles smooth and glossy. You must have a clear bright fire to heat your irons. Wood and coke are better for this purpose than coals. Get all you need ready before you begin to iron, for when once started you should delay as little as possible until you have finished, lest the articles get too dry. Put your ironing-board or table where you have a good light, and can easily get to the fire. You will need a thick woollen cloth, or an old blanket folded several times, for the ironing-board, which must then be covered with a clean white ironing-sheet. Both these covers must be fastened down tightly.

Have some Bath brick powdered on a coarse paper by the hearth to rub the irons on, and a duster to clean them with. A thick holder and a stand for the irons, a clothes-horse, and a small flannel-covered board for the fronts of shirts (if you have any to iron) will complete your preparations. The most difficult garment to iron is a white shirt. I advise you to take the opportunity whenever you can of watching some done before you attempt it yourself. The starched parts must be first ironed; and the sleeves and gathered parts of the body laid in folds. Linen collars and cuffs should be ironed slightly on the wrong side, and finished off on the right side with firm, even pressure.

Laces and muslins do not require to show any gloss, and they are therefore ironed entirely on the wrong side. As you finish each article hang it on the clothes-horse to dry well, or it will be limp. The beauty of embroidery and some other trimmings is lost if they are flattened, but you can prevent this by ironing them on something very soft, and only on the wrong side.

Cooler irons will do to iron over the linen that has been mangled. Do not forget the strings of garments. Handkerchiefs must be ironed the way of the selvedge, or they will be pulled out of shape. Petticoats and dresses are best ironed on a board placed on trestles.

It is impossible to be too careful about the airing of every article after the mangling and ironing. Serious illness may be the result of neglect in this matter.

Like utensils used in washing, those required for ironing must be carefully put away when no longer needed, and kept scrupulously clean.

CHAPTER VII.—DARNING AND MENDING.

I WANT you to recall the second step of preparation for washing. You remember the clothes have to be sorted, so that they may be arranged in sets. There is another sorting needed, for the sake not of washing but of mending. All articles that need either darning or patching should be attended to before they are sent to the wash-tub, with the exception of stockings and very dirty articles unfit for handling. A good manager is most particular on this point, and so saves herself much trouble and the clothes much damage. Thin places soon become holes, and small holes large ones, in the hands of the washerwoman.

Most girls dislike darning stockings. The big holes so often made by brothers and fathers are certainly very troublesome to mend, and require much patience and industry on the part of the mender.

You have been taught, probably, first to run with regular stitches every other row of canvas, then to do the same on some coarse material, and finally to repeat the operation on a stocking web. Well now, if you put this into practice, and run the heels and toes of new stockings, you will find you have fewer holes to mend. When you knit stockings, thicken the heels and toes as you knit, and you will not then need to run them. Good

woven stockings are made with stronger heels and toes, but if you cannot afford to buy this superior kind, you can at least strengthen your stockings, and so make them wear better. You have been told that stockings must be darned after they are washed ; therefore before putting them away look for holes and thin places.

I do not think I need actually describe the method of darning to you. Your teacher does that in school, and a few words from her will be worth pages of writing from me. But there are a few hints you may bear in mind at all times, which do not belong to the actual stitch.

Darning must always be done on the wrong side of the article.

Never pass over a thin place or a tiny hole. "A stitch in time saves nine." It is just these unsafe places that become big holes during the next time of wearing, if passed over.

Do not keep too close to the hole, but extend your darning to some little distance all round it ; else the strain of the new cotton or worsted will prove too much for the edges, and the hole will break out afresh.

Let your cotton or worsted be suitable in colour and texture for the material darned. For instance, don't darn grey stockings with brown wool, or fine Angola hose with coarse worsted. For table linen, which is difficult to darn, there is made a specially prepared thread. An expert needlewoman can imitate the pattern in damask table linen so closely that the darn can scarcely be noticed.

How frequently a teacher looks with regret at a girl's torn dress ! Only a slight tear at first, she sees it daily increase. "Why do you not darn that tear?" she asks the girl. The girl looks surprised at the question; she has never thought such a thing possible. But is it very hard? Try it the next time you tear your dress; draw the edges carefully together; tack a piece of stiff paper over the slit on the right side, and carefully darn the hole on the wrong side, when you can remove the paper. You will find the result well worth the trouble.

Still it is not every hole that can be darned, or that will pay for the trouble of darning. Sometimes you will need to *patch* the garment. When large pieces are much worn, such as fronts of shirts, yokes of night-gowns, and lower ends of sleeves, it is better to remove them entirely and put fresh parts in than to attempt small patches. Aprons, towels, and sheets frequently wear very much in the middle, while the sides remain good. The best way to deal with them is to cut out a strip from the centre, join the sides to make a new centre, and re-hem. By so doing you lose a little in the width of the article, but you make it serviceable for a long time afterwards.

Never use entirely new material for patching, if you can help it. It is too strong for the surrounding parts. This, indeed, is taught you in the Bible, where it is said, "No man putteth a piece of new cloth unto an old garment, for that which is put in to fill it up taketh from the garment, and the rent is made worse." How are you to

avoid being obliged to use new stuff for this purpose? There is but one way, and that is to keep a "piece bag," or "basket," in which to store, in tidy packets, pieces of new calico of various qualities, woollen scraps, especially cuttings from coloured flannel shirts or jackets made at home, remains of partially worn under-garments and table linen (washed, of course, and very clean), and remnants of prints. With this bag to fall back on you will have little need to use unsuitable patches.

Suppose, now, you have to set in a patch. What will you do? Hem a piece over the hole and leave the under side untouched? I am afraid that is exactly what some lazy or badly taught people do. You have, perhaps, already been shown in school how to proceed. If not, try to put these few directions into practice.

(1.) Cut away, *by a thread*, the torn or thin part. Passing along the street the other day, I overheard two girls talking over their afternoon's lesson in needlework. Evidently they had been having a lesson in patching. "Why does teacher trouble about our cutting by a thread?" said one; "I can't see that it matters much." "Ah," replied her more thoughtful companion, "you did not see Mary Brown's patch that she brought from home to show teacher. She had not cut by a thread, so it was crooked and wouldn't set at all." "It wouldn't set!" that is just what happens when the patch or the edges of the hole it is to fill are not cut evenly by the thread. And remember, girls, "What is worth doing at all is worth doing well."

(2.) Cut a piece of fresh material *larger than the hole*, because you have to allow for turnings-in.

(3.) Fix and work in the patch. There are various ways of doing this. If the garment is old, and the mender's time very precious, it would be allowable simply to fold the edges of the patch and of the hole (slightly snipping the latter), fix the folded edge of the patch over the folded edge of the hole, and hem both sides. But the best, strongest, and most correct way is to set in the patch with a "sew and fell" seam, so that the fresh piece forms the fell on the wrong side of the article. Of course, this is more difficult to accomplish neatly, and requires a considerable amount of practice to do it properly ; but it is well worth the trouble of learning.

SECTION II.

FOOD—ITS COMPOSITION AND NUTRITIVE VALUE.

CHAPTER I.—COMPOSITION OF FOOD.

HERE, again, are two hard words for little girls. Washing, mending, and ironing they easily understand, and food they know something about when it is upon the table and ready for them to eat. But its "composition ;" what is that ? And its "nutritive value ;" what is that ? Well, now, I will try to tell you something about it ; not much, just a simple outline of the subject.

We are warm, even when all around is cold. How is that ? The fire is hot ; so is the flame of the gas, or of the candle. This heat is produced

by "combustion," or "burning." Fire is the burning of wood or coal, or other "combustible" matter. There is in the air a gas called *oxygen*. This unites with materials which will burn, and this union, or "oxidation," produces heat. There is oxygen in the air we breathe. Through our lungs it gets into the blood. In the blood it unites with combustible materials, and it is this union, always going on, which makes the blood warm. The materials which burn most readily are *hydro-carbons*, that is, substances which consist of hydrogen and carbon. The more quickly the oxygen unites with such substances the greater is the heat produced. In the fire the heat is great. In the body the union is regulated so that a certain temperature only is maintained, and this is known as "the body heat." This is in health about 99 degrees Fahrenheit (99° F.). If it rises much above this (108°) life is soon extinguished; and death results if it falls below 92°. To maintain this "body heat" we require so much "fuel food," or hydro-carbons.

Then there is the substance of the body to be built up in growth, to be repaired when adult life is reached. Look at a sheep or an ox, at the butcher's. You see the white fat, the red flesh, or muscle, and the hard bones. Now, fat and flesh and bones and nerves and skin are called the *tissues* of the body. These have to be fed by their proper food, which is called "tissue food;" because it is required by the tissues for their growth and repair. Now, what is a "tissue food"?

“Tissue foods” produce little heat, as they do not readily oxidise. They do not oxidise freely, like the “fuel food.” If the tissues of the body oxidised as readily as hydro-carbons they would burn up with the “fuel food.” “Tissue foods” contain the element *nitrogen*, which does not like oxygen; and this it is which prevents their ready oxidation.

“Tissue foods” are called *albuminoids*, because in composition they resemble the white of eggs, called “albumen.” Albumen consists of hydrogen, carbon, and nitrogen, with a trace of sulphur. These albuminoids are requisite for tissue repair. The tissues do not produce much heat, as they do not burn properly; they only wear out. As they wear out new material is required.

In addition to these substances certain mineral matters are needful, as common salt, for instance. Lime is also wanted for the production of bones; while iron is needed for the blood, and phosphorus for the brain and nerves.

Now, let us consider this question of food a little more in detail.

First—What substances furnish our “fuel food”? “Fuel food” is furnished by hydro-carbons. The chief substances so used for food are starch, sugar, and fat.

Starch is also known as *farinaceous* food, that is, food containing *farina* (flour). Starch forms a portion of all cereals (corn plants), as wheat, barley, maize, oats, rye, and rice. It is also found in the *legumes* (pulse), as the pea and bean. It exists in the potato and some other vegetables.

Sugar is found in the sugar-cane, the beet-root, roots allied to the beet-root, carrots, turnips, and all sweet fruits, from the banana to the grape. Sugar also exists in honey and in treacle. Sugar and starch are nearly alike in their composition, and starch is converted into sugar in the process of digestion.

Fat is found in vegetables as oil (*e.g.* olive, or almond), in seeds as rape oil, or linseed oil, and is procured by pressing it out of the seeds. It exists, but is not to be seen by the eye, in cereals, as, notably, in maize and oats. Fat is also found as oil in certain animals, as whale oil, or cod-liver oil. The last is the most digestible of all fats, and consequently is given to invalids, and especially to consumptive persons, who can often digest cod-liver oil when they cannot digest any other form of fat. Fat, as "fat," is largely found in all animals fed for the butcher, as the ox, sheep, and pig.

Fat is not only a "fuel food;" a certain quantity of fat is required in order to make perfectly healthy tissues. The brain consists largely of fat in combination with phosphorus.

Tissue foods, otherwise known as albuminoids, are found in the flesh of animals, in milk, and cheese, and also in some vegetables, notably the legumes. Some races are forbidden by their religion to eat meat, as the Sikhs of Upper Hindostan; yet they are a fine stalwart people, who use pulses, or legumes, largely for their food. The Bengalees, who mainly live on rice, are poor and weak in body compared with the Sikhs. Fish,

reptiles, frogs, lobsters, shrimps, all furnish an albuminoid in their flesh; as also do the oyster and mussel, whelk and winkle.

The mineral matters are furnished from the animal and vegetable world. Scurvy, a very serious disease, is produced by eating salt meat and bread, and is cured swiftly by fresh vegetables of any kind, or by milk. Phosphate of lime is found in the cereals. Common salt is a great luxury with some peoples, who can only procure it at much cost, so that the expression, "He eats salt to his food," is used to signify a rich man. Fruits are valuable for the acids which they furnish to the blood, and without which our bodies could not remain in health.

CHAPTER II.—NUTRITIVE VALUE.

NOW a few words as to the "nutritive value" of food, that is, "its power to nourish." Starch is the basis of our food for combustion, or oxidation for the production of body heat or muscular force. Sugar stands next from its composition, but fat is the purest form of hydrocarbon. These "fuel foods" are essential to life. Milk contains sugar and fat, known as cream or butter, as well as an albuminoid body—*caseine* (the cheese-forming part), and also a quantity of salts of various kinds; so it is a complete food, and life can be kept up for any length of time on milk alone.

Other foods require combinations to secure the proper proportion of foods of the various kinds. Thus we eat meat and potatoes together,

or pease-pudding with fat beef or pork. Bread and dripping is the food of many a working field-labourer. Porridge and milk is a capital food, now too much neglected. The use of tea has been followed by some bad results. In towns where the meals are mostly tea with bread, and a little butter, the population are stunted and small, and the children do not thrive well ; while a very large number die in infancy. Where milk has been added the improvement has been marked.

When we talk about the *nutritive value* of food it is necessary first to understand what we are talking about, else we are apt to talk nonsense. We must first see what we mean by "nutritive value." If we mean the forming of the tissues only, then of course the hydro-carbons have little or no "nutritive value." But it would not be right to say that therefore these materials are of no use as food. We might as well talk of making a candle out of cotton wick without any tallow. It is the fat in the candle that makes the flame, and produces light by its oxidation ; so in the body it is the hydro-carbons which produce heat and force. Whatever may be the "nutritive value" of "tissue food," without "fuel food" we should soon burn out, just as a lamp dies out when the oil is done. The wick remains, true ; but when the oil is burnt out the wick is useless.

So in speaking of the "nutritive value" of different foods we must think about what we are saying to prevent error. It has been held that animal food—meat—possesses the power to give

“strength,” and that living on meat will make the eater strong in both senses, that is, will endow him with vigour and power and make him “strong in constitution.” It is quite true that a liberal allowance of meat is good and enables the eater to do hard work better than a man who does not eat meat. But it does not follow that the more meat that is eaten the stronger the eater will be. Only a certain portion is digested, and all beyond this is useless for the nutrition of the body. For most persons a small piece of meat to a plateful of potatoes is sufficient; and it is really most important to add some fat to the potatoes, as butter or dripping. The eater requires only a certain amount of material for the nutrition of his tissues; and the rest of the meal should be “fuel food” only. Further, meat is costly. The same amount of “tissue food” can be furnished from legumes at much less cost. A piece of cheese will always give to a meal the requisite amount of nutritive value, that is, “tissue food,” at a comparatively small cost. Something more will be said on this subject in the next part, when speaking of the “functions of food.”

Children, who have to meet the demands of growth, require more “tissue food” than full-grown adults. But it is a mistake to give children wine, or beer, or stout to “strengthen” them: such fluids furnish no “tissue material,” and little “fuel food,” while they are too stimulating to be good for children. They often do much harm, and it is very doubtful if they ever do any good.

DOMESTIC ECONOMY.

Part II.

SECTION I.

THE DWELLING.

CHAPTER I.

CHOICE OF A HOUSE.

IT is not always possible to choose a house merely for its healthiness. A workman for many reasons must often find a house near his work, which is the first thing he has to think of. In some cases, however, it is possible for a man to go to his work every morning by a tram-car, or by railway. Suppose, then, he is to some extent able to choose his house ; how he is to be guided in his choice is the next question.

The first thing to be borne in mind is this, that many persons are never well if they live in a house that stands on clay soil, while they have fair or even good health on gravel. Clay is cold and wet long

after rain has ceased to fall ; but on gravel the water soon drains away. In order that the water may soon drain away it is best to select a house on a hillside, if possible facing south or west. It is a matter of much moment to see that the sun shines freely into it. The importance of sunshine to health has been tested in barracks. It was found that the health of troops was always bad in barracks lying away from the sunshine ; that it improved at once when the troops were moved to sunnier barracks, and grew worse when they were changed back to the sunless barracks.

Then find out, if you can, whether the house has been built where rubbish has been shot. Such foundations lead to much ill-health. If the soil is a damp clay, see if it has a foundation of concrete, or other water-tight material. Many houses are simply built upon the ground without any proper foundation ; and these houses are never healthy. Let the flooring be of wood if possible. In many towns cottages have floors of bricks. These soon dry on the surface after being washed, and look clean ; but the bricks absorb much water, and such houses are always damp. Remember, too, that rheumatism and consumption are often caused by damp floors and subsoils (that is, the soil under the surface).

Look to the roof too, to see that it is water-tight, and also that the windows are well fitted into their frames. When water gets into a house it makes it damp and unhealthy. See that the

down pipe carrying rain from the roof runs into the main drain, so as to ventilate the drain, and keep sewer gas out of the house.

Then see that the cottage is in a row in 'a broad street, along which the wind can blow without check; also avoid back-to-back cottages if possible, as they are too confined to have a free current of air around them.

The size of the cottage must depend upon the wages earned, and on the number of the family. It is never true economy to live in a house too small for the actual needs of the family; what is so saved in rent is lost in ill-health, in lessened earnings, and in doctors' bills. Where there is a family of boys and girls there should be at least three bedrooms: one for the parents, a second for girls, and a third for boys. It is neither decent nor desirable for children of opposite sexes to sleep in the same room after infancy.

Then see that the water-closet is so placed that the sewer gas will not get from it into the house, and that smells do not extend from it into the rest of the house. After this try to learn something of the direction of the drains and the sewers. In spite of the care of inspectors, rows of houses are not uncommonly built without a proper outfall for the drains and sewers. This is a point of great moment, yet often scarcely attended to in selecting a house.

When a young couple marry, they have to decide whether they will go into a small cottage

of their own, or lodge with a family. If they decide upon the latter they must still attend to the different points mentioned above. If they wish to have a little house of their own, it is well to take a *tenement* in the large blocks of buildings divided into separate dwellings, now to be found in many places. In such buildings it is quieter and healthier to be on the higher floors.

Then there are some matters of a social character to be attended to. Do not, if you can avoid it, live in a dirty, noisy street, with a public-house at each end or corner of it. If you do, you will live amidst drinking habits, quarrels, and squalor. Such dirty, squalid streets are always unwholesome ; and the people who live in them are not good examples for adults, and are very bad neighbours to live near where there are children, who are readily influenced by bad examples.

CHAPTER II.

FURNITURE.

HAVING seen to the position of the house, its rooms, its drains, and so on, and the kind of people who live near to and around it, next comes the question of furnishing it. Rooms look bare if they have not in them enough furniture. On the other hand too much furniture hides dirt, and

interferes with the light getting into the room and showing where the dirt is. Do not, then, attempt to over-furnish. Get first what you cannot do without, then add as your means will allow. A piece of carpet in the bedroom, two chairs, a chest of drawers, washstand and looking-glass, with a set of bedroom crockery are enough with a bed. Now for the last. It is well that it be of iron. Wooden beds harbour fleas and other vermin. Iron bedsteads are cheap and durable, and easily cleaned.

Then get a straw palliasse, and on that a mattress of horsehair, cotton, or coir. These are better than soft feather beds. It is quite unnecessary to have bed-curtains. It is better to have free air about us when asleep. The window should open, so that each morning, except when it is very wet, it can be left open while the bed-clothes are thrown off in order to ventilate the room. In summer it should be open all day.

Then for the day room, a table, chairs enough, and a sofa are wanted ; with a cupboard. Don't keep more clothes hanging about than can be helped. A cupboard in the scullery should contain the extra boots and shoes.

In the scullery you will keep your brushes, pails, slopbasins, dustpans, and other household articles, so as to have them away from your living rooms ; also the pots and pans as far as possible. Especially is this necessary when the living room is also the room in which the cooking has to be done.

A kitchen is always desirable if it can be afforded, in order to prepare the food and wash the household pots and pans as well as the clothes. If there is no separate kitchen, then do this as far as possible in the seullery.

And now mind this : a man who is working hard out of the house likes to come into a clean room, free from smell, for his meals and his short rest at meal-times. Always make an effort to keep this room as attractive as possible for him. Then set out his food, however simple the fare, clean and tasty, with clean crockery, knives and forks. And also be punctual with his food. See that it is ready for him when he comes in. When a man is hungry he is apt to find fault or to be cross. "A hungry man is an angry man : " and men do not like at any time to wait for their meals when hungry ; still less when they have little time to spare. They grow first fidgetty and then quarrelsome. And even if it makes more work, have a pleasant-looking room and the meal ready when your father and brothers come home, or your husband when you have got one. If you do not attend to this with earnest care you will not be surprised to find that they will seek the greater comfort of a bright clean bar, and the solace of a glass of beer. Make your house pleasant and attractive to the "men folks ; " if they are comfortable and happy at home they will not wish to call in elsewhere. If home is not attractive, depend upon it they will stray away to

what is more attractive. Also be as neat, and clean, and tidy in your dress and person as you possibly can. A woman should always be as nice as she can make herself. No work or labour should interfere with personal neatness, if it be possible to preserve it. At "spring cleaning" this may not be possible; but most men know what spring cleaning is, and how to make allowance for it.

Then see that there is no slop, no dirt and rubbish left about your scullery or yard; no pieces of vegetable leaves or bones about the trap of the drain. Empty your dust-bins as carefully as possible into a heap, or if possible into a tub, and never allow any rubbish to remain a day longer than you can help. Have everything ready for the dustman's cart when it comes round.

CHAPTER III.

WARMING AND VENTILATION.

IT is necessary to say something special on these important matters, as little is known on the subject, and yet health so largely depends upon them. The means of preserving health used to be little considered. But hardly anything can be more important, for bad health means small earnings, discomfort, and doctors' bills. In fact, in no posi-

tion of life can persons who have to earn a living afford to be ill ; and least of all those who live by bodily toil, called socially "the working classes." Ill-health tells very severely upon them. Therefore it is of primary importance to keep well. A house well-chosen is not a healthy house if it is not properly warmed and ventilated.

It was said in Part I., p. 8, that clothes are worn for warmth. So houses are needed to protect us from the cold. Houses, then, should be built of warm material. In very cold countries wood is preferred. On the Steppes of Russia the peasant makes his house of wood, fitted and built as carefully as a ship is constructed. This makes it warm in winter ; and not only that, but it is cool in summer, wood being a very slow conductor of heat. The house, therefore, must be warmed, and the fire that warms the house can also be used for cooking purposes. It is not wasteful to burn a fire for warming a room if at the same time it heats a pot in which some food is stewing. A good manager will never waste a fire ; there is always something that can be cooked, or dried, or aired with it, or by it.

Now about warming the house. If it is a draughty, cold, damp house it will cost much more in fuel. If the rent is low, still it is not a cheap house if it requires much fuel. The saving in rent is soon spent. Wood is pleasant, but is dear. Coke is cheap, but it will not do alone ; it can be added to a coal fire when once well burning. Coal

runs away with a deal of money in winter ; and in summer some money should be laid by against winter cold and the cost it brings. Some fire-grates are wasteful in coal ; some allow the heat to pass up the chimney rather than throw it into the room. These are matters which cannot be gone into here ; the details you must acquire as you grow and observe. But do not forget the facts.

When a meal is being cooked the fire must burn briskly. When you poke a fire put in the poker at the bottom, and poke out the ashes and dust so as to give a free passage to the air, else the fire will choke. Then when you put on coal do not throw it on from the scuttle, but take the pieces out one by one and lay them on the fire, each in place ; if the coal be small, put it on with the shovel. When the fire is not wanted for anything in particular press it well together at the top and put over it some small coal ; and this may be wetted with advantage. A firm crust will thus be formed, under which the fire will burn slowly without waste. When you require a brisk fire put the poker under it and crack the crust, and the fire burns up at once.

If a fire is required in a bedroom, do not light it early in the day and then allow it to die out, and so waste it ; but light it in the evening, and then do it up at bed-time. If it has to burn all through the night be careful to see that it is burning freely about the small hours of the morning ; as this is the coldest part of the "night."

Now a few words as to lighting a fire. First clear out the grate, leaving one or two clean cinders at the bottom. Then place in it some paper—not an unfolded newspaper or journal, but paper so “crumple” that the air can get through it. Then place over this three or four pieces of wood ; and upon these again any half-burnt coals remaining, or a few pieces of fresh coal. See that the air can pass freely through the whole, else it will not burn. If a lot of small coal be thrown on the top that fire will never light. Laziness thus defeats itself. The lazy housewife “makes up” the fire when she “lays” it, to save trouble. But it does not burn until relaid. So “lay” the fire properly : when once well alight then you may put on more coal ; but “the more haste the less speed” holds good of making a fire as well as of other things.

Now as to ventilating a house. *Ventilation* comes from a Latin word meaning wind. By ventilation is meant a mode of bringing fresh air into a room or building, and getting bad air out. The current of air caused by a fire does much towards ventilating a house. Still, take care you do not have draughts. Draughts are unpleasant and give colds. But the more you close every cranny the more you must secure a draught from the holes remaining open ; unless you close them all ; and then you make sure of bad ventilation. If the fire has to burn it must have oxygen ; just as you must. All heat, as commonly produced, is the result of combustion by oxidation

(that is, union with oxygen). The heat of the fire is produced by the oxidation of the fuel. All body heat is produced by the oxidation of the *hydrocarbons* of our food. Oxygen is, then, requisite for the fire and yourselves both.

Rooms may be too draughty, so as to be cold and comfortless ; or too close, in which case they are unhealthy and unpleasant to occupy. In summer have the windows open all day long ; in spring and autumn while the sun is shining. In winter have the bedroom windows open for an hour or two in the middle of the day. The day rooms are ventilated by the opening of the doors as people go in and out.

CHAPTER IV.

HOUSE-CLEANING.

A DIRTY house is an unhealthy house. Of course, if the ventilation, drainage, and water supply be defective, the house cannot be made healthy by cleaning ; but if they be ever so perfect, and the mistress of the house neglects to keep it clean, it must be unwholesome, and therefore unfit to live in. It is not in a woman's power to alter defects in the building, but household cleanliness *is* her work ; and just as a dirty collar or a ragged dress betrays an untidy wearer, so unpolished grates,

dusty furniture, and windows which keep out the sunshine by their thick layers of dirt, show the presence of a sloven.

While girls are attending school, they have little time for helping their mothers to wash the clothes ; but they will find many moments for practising housework. I dare say many of you do something in this way on Saturdays ; and the older you become the more you will be able to "help mother," and also prepare for the time when, in service or in your own homes, you will have no one at hand to show you what to do, or how to do it.

Learn to *think beforehand* what has to be done in the course of the day ; what materials are needed, and the best way in which the work may be done. It is want of this forethought which causes some people to find themselves in a constant muddle, always at work yet seeming to finish so little ; whereas, if the work had been thought about in an orderly manner, it would have been done with less trouble in less time, yet with far more satisfaction. Bear in mind three "C's" which will help you to become clever housemaids, viz., *clean willingly, clean thoroughly, and clean briskly*. Clean willingly ; because willing hands get through a great amount of work. Clean thoroughly ; for a house carelessly cleaned is only half cleaned, and needs cleaning again in half the time it should do. Clean briskly ; or you will be always behindhand with your work.

Let us now suppose that, having left school, you find yourself expected to keep a small house clean. How would you proceed? ' You must bring your forethought to work, and see what has to be done every day; what has to be done once a week; and also what has to be done at special times, say half-yearly.

Every morning you should roll back the bed-clothes and open the bedroom windows for half an hour at least before you remake the bed, in order to get rid of the impure air which has gathered during the night. Then you go downstairs to clean the grate, light the fire, and sweep, air, and dust the living room. So you see you will have to get up in good time. Never let the family sit down to breakfast in a dirty room, with a dull fire, and an unswept hearth; for these things depress the spirits, and unfit people to face the day's toil as they could wish.

You will probably have time before eight o'clock, the usual breakfast hour, to sweep the passage and front steps; and clean the latter if they need it.

After breakfast there will be the fire to make up for cooking, the breakfast things to wash; dirty water to carry from the bedrooms, jugs and water-bottles to refill, beds to make; and the bedrooms to dust and put in order. A sitting-room or parlour will only need dusting and setting straight day by day, unless it has had a fire in it the previous day, when it will require sweeping and the grate cleaning.

Downstairs there is the dinner to be prepared, knives to be cleaned, and the table to be laid. After dinner, plates and dishes must be washed, the kitchen and scullery put tidy, and the fire made up for the afternoon. Afterwards, there is little dirty work to be done, so you may dress yourself for tea.

Once a week every room must receive special attention. A sensible woman arranges so as not to let this be done all on one day ; nor does she choose the early days of the week, when washing and ironing have to be looked after. For instance, you might clean bedrooms and stairs on Thursday, the parlour on Friday, and leave the kitchen, scullery, and yard for Saturday.

Bedrooms must be thoroughly swept out every week, and cleaned once in every two or three weeks in summer. In winter time, owing to the difficulty in drying boards and the danger of sleeping in a damp room, you must only wash the bedroom floor on a fine bright day.

Each week the parlour carpet must be well swept, the fireplace cleaned, the windows brightened, and furniture well dusted.

The floors of the kitchen, scullery, pantry, passage, and the stones of the yard must be scrubbed, the plate cleaned, and many other little weekly jobs attended to, before Saturday afternoon arrives.

Twice a year the house needs a special and thorough cleaning in every part. The most im-

portant time is in the spring, about the month of April, when we have said "good-bye" to winter for a time, and the bright sun, gathering power every day, peers into every nook and corner. It is then that painting, whitewashing, and papering must be done. Winter curtains must be taken down, well shaken, and put away to be replaced by lighter ones. Heavy carpets have to be taken up and beaten, while the boards underneath them are scrubbed. Venetian blinds are cleaned and, if they need it, repaired. Upstairs, beds and mattresses must be attended to; bed curtains, if used, removed and washed, and extra blankets cleaned and put away until winter returns. Everywhere in the house paint-work, if not repainted, has to be cleaned. Sofas, stuffed chairs, and cushions are to be taken into the open air and well beaten and brushed. Furniture must be polished, pictures lifted down, their frames dusted well, and their cords renewed if dirty or in any way worn; also ornaments must be washed or otherwise cleaned.

When evenings get longer and the chill air calls for fires to sit by, then comes another great cleaning. But this time there will be no painting or whitewashing. Summer curtains and many starched articles must now be washed and put away *unstarched*, lest they should crack in the folds or turn yellow.

CHAPTER V.

METHODS OF CLEANING, AND MATERIALS USED.

DIFFERENT kinds of material require different methods of cleaning. I suppose no girl would clean the grate with hearthstone ; but there are girls who use soda to clean paint work, and who dry glasses with a greasy towel.

For sweeping uncarpeted rooms use a soft, long-handled broom, and sweep the dust before you, with short firm strokes, towards the door or fireplace. Carpeted rooms need a short-handled brush, and the dust should be gathered into a dust-pan at each stroke. Damp tea-leaves, scattered on the carpet before sweeping, prevent the dust rising so much. Bricks, stone areas, and yards must be swept with a stiff long-handled brush ; while a special little brush must be kept for sweeping up the hearth.

However careful you are in sweeping, there will always arise some amount of dust, which you must allow to settle before you attempt to dust the furniture, or your labour will be in vain. I suppose dusting is often handed over to you on Saturdays, even now ; because it is a work you are well able to perform for your mother. It calls for no great exertion, but it requires care and thoroughness. Are you tempted sometimes to wipe round the ornaments on the mantelshelf, to leave untouched

the legs of tables and chairs, and to neglect window ledges and door frames? If so, remember the advice I gave you some time back, and *dust thoroughly*; you will find it save time and trouble in the end. It is not enough merely to remove the dust from polished wood. Furniture must be briskly rubbed if it is to be kept bright. Remove carefully all the small articles from tables, sideboards, and mantelshelves, so that you may clear away from under them the dust which would otherwise rest there. I need scarcely remind you with what care you should handle ornaments, which from their brittle nature are very liable to injury. An old silk handkerchief makes the best duster for these delicate articles.

Unpainted wood-work, such as kitchen tables and dressers, as well as floors of rooms, must be scrubbed. For this method of cleaning a scrubbing brush, soap, hot water, and soda are required. Plenty of water, which should be frequently changed, hard brisk scrubbing, and thorough drying with a coarse cloth will make boards white and clean. Many people use white sand, which is sprinkled on the boards when wet, instead of soda. It makes the wood white, for soda has always a tendency to turn it yellow. Wood should always be scrubbed in the direction of its grain. Don't leave little heaps of wet dirt in the corners of the rooms, but use a skewer to clear them out, and be careful not to show where you leave off one portion and commence another. Always let the scrubbing

of rooms be morning work, so that they may dry in the early part of the day.

Painted wood, such as wainscoting and doors of rooms and cupboards, as well as oilcloth, should not be washed more than is absolutely necessary. Neither soda nor the scrubbing brush must be used, but a flannel, warm water, soap, and a soft cloth for drying. If you do not thoroughly dry paint, it loses its brightness; and oil-cloth, if left wet, rots. After drying the surface, rub it well with a perfectly dry, soft rubber, and in the case of oil-cloth rub a little milk in, to restore the brightness.

Cleaning fire-grates is, perhaps, the dirtiest work to be done in a house, and if you let the blacklead get into your skin, your hands become rough and unfit for needlework. You can, however, avoid this if you wear a pair of wash-leather gloves, which cost little, and which preserve your hands from getting grimed with dirt. Grates need frequent blackleading while fires are lighted in them. Buy good blacklead; there is no saving in purchasing inferior kinds, for they give no polish. Three brushes are wanted for grate-cleaning, viz.: a little round soft one with which you put on the lead, and two stove brushes for polishing. Mix the blacklead with water enough to make it as thick as cream, and do not let it get too dry before you polish, or you will not succeed in obtaining a clear bright surface. The black ends of the fire-irons and the insides of fenders (their outsides

also if made of iron) are to be cleaned in the same way as the fireplace.

Steel fire-irons and any steel parts of the grate should be well rubbed daily with a soft leather. This will keep them in good condition without the use of Bath brick or emery paper, both of which scratch and spoil the surface.

Even little girls are set to clean the hearth and the stones in front of the house, and very proud they often are to do it. But how often is the stove found to be splashed, or the sides of the boards round the hearth daubed with hearthstone. You can avoid this by taking a little care. As a rule, only water, a flannel, and hearthstone are needed; but if you find the stones greasy or discoloured you must use hot water, a little soda, and the scrubbing brush. Don't try to cover up the dirt by a layer of hearthstone; but wash well the stone, rub on the hearthstone, and with a well-wrung-out flannel rub it in with straight lines, leaving no gaps between, or the surface will not be smooth when dry.

Although daily dusting will keep the surface of furniture in fairly good order, yet it sometimes, as for instance at the half-yearly cleaning, needs special attention. It can then be cleaned with boiled linseed oil, or with bees'-wax and turpentine, rubbed in with a firm hand in the direction of the grain of the wood. Use a soft duster and plenty of "elbow grease," until you can see your face reflected in the article. However well you may

clean a room, polish its furniture and brighten its stove, yet unless you keep the windows clean your room will look cheerless and uncomfortable. Windows need dusting several times a week, and cleaning once every two or three weeks, according to the state of the weather. When the sun is shining hotly on them, it is useless to clean them, because they will not brighten. In frosty weather the glass is so brittle that you have often to leave them uncleaned, lest you should crack them. It is better not to use a duster for window cleaning, because the fluff from it is tiresome to get rid of; so use two wash-leathers, one to wash them with, the other for polishing.

Drinking glasses and lamp globes should be washed in warm water containing a little soda, rinsed in clean cold water, dried on a soft cloth kept especially for this purpose, and lastly, polished with a wash leather. You can use the polishing leather you keep for windows, for the glasses also.

China and earthenware must be washed in hot water first, and then rinsed in clean cold water, and dried. Greasy dishes and plates require very hot water; always put them aside until such articles as cups and saucers are finished.

When washing up tea-things be careful not to put hot water on a japanned teatray, or the japan will crack and peel off. Generally, it is sufficient to rub the tray with a dry cloth. If, however, it should be very dirty or greasy, wash it in warm

water with a flannel and soap, dry it and sprinkle a little flour on it. When the flour has been on a few minutes rub it off with a soft cloth, and polish it with an old silk handkerchief.

For cleaning knives and forks have a board covered with leather, and use Bath brick, not scraped with a knife, but rubbed on the board. A little care is necessary to keep the blade flat on the board, so as to avoid turning up the end of the knife, or cutting the leather. Rub the knife briskly to and fro with a firm regular pressure until it is bright. Steel forks must be cleaned with a leather and Bath brick, paying special attention to the prongs. Many knives are spoiled by the brick being allowed to eat into the steel ; so be careful to dust them as soon as they are cleaned.

“How does your little maid manage?” asked a lady of her friend who had recently taken a girl of fifteen to help her in the house. “Oh, my dear Madam, I really thought she would do very well,” was the answer, “until I found her on Saturday morning cleaning the plated forks with the Bath brick and leather.” Poor girl! steel forks were the only ones she had been used to clean, and of plated goods she knew nothing.

Either plated or silver articles need great care ; else they are soon spoiled. Nothing rough or gritty must be used, or their beauty will be diminished. They will keep clean for a long time by being well washed with a flannel and soap in hot

soda water, and thoroughly dried with a soft cloth. When they need polishing, it must be done with fine sifted whiting or powdered chalk, or Goddard's powder, mixed with water into a stiff paste, and rubbed on with a piece of flannel. When this mixture has dried a little, it must be rubbed off the article, which will then need polishing with a leather. Jugs, tea and coffee pots, handles of spoons and forks, &c., are often ornamented with embossed or chased work, for which a proper plate brush must be used.

Brass work, such as stair rods, handles of doors, &c., is cleaned with rottenstone crushed into a powder and mixed with sweet oil. It is applied with a woollen cloth, and a dry leather is then used to give it the desired polish.

You will have discovered by this time how many different materials you require for your house-cleaning. Now, you cannot afford to waste your time in looking for and gathering together these things whenever you need them. In order to avoid this difficulty it is well to have a box made, with compartments in which you can keep these articles, and which you can easily carry about the house with you. Any carpenter can make one, and it can be bought for about four shillings.

SECTION II.

FOOD: ITS FUNCTIONS.

WHAT food is we all know very well ; but the word "functions" is not so easy. It means, however, the doing of work proper to any office or position. For example, it is the function of a teacher to teach, and of a scholar to learn. In a locomotive it is the *function* of the fire to boil the water, and of the steam to work the piston. Now what are the functions of food ?

By food we are enabled to grow, to maintain life, and to keep ourselves warm. In Part I. you were told that our food was divisible into "tissue-food" and "fuel-food ;" that "fuel-food" consists of hydro-carbons which burn readily ; while "tissue-food" contains also nitrogen, and burns or oxidizes less readily. There are also mineral matters for the salts of the blood and the body ; and *anti-scorbutics* valuable for their power of keeping away scurvy, and the skin diseases which result from living too completely upon salted provisions and cereals.

Now as to the different forms of these foods used by us ; take hydro-carbons first.

"Fuel-food," or hydro-carbons, we find in starch, as in flour, oatmeal, maize flour, pea meal (all of which contain some albuminoids), in sago, tapioca, and arrowroot, and in the potato ; or in sugar, as in the sugar cane, beetroot, honey, treacle,

sweet fruits of all kinds, in turnips, carrots, onions, and leeks. All the slightly acid fruits, as gooseberries, strawberries, apples, oranges, tamarinds and others, contain acids which are pleasant to the palate, and "good for the blood," as it is termed.

Then we come to fat in the form of cream, oil, butter, and the fat of animals of various kinds.

When more "fuel-food" is taken than is wanted to keep up the heat of the body, what is not used at once is stored up in the body as fat. Thus the farmer feeds his sheep, cattle, and pigs, in order to fatten them for the market. The flesh, or muscle of animals which are fattened, is more nutritive than the flesh of lean animals. Imperfectly fattened meat commands a less price in the meat market; though butchers try to sell it in their shops at the same price as prime meat. The fat in the body is made from fat, starch, or sugar. Negroes employed in making sugar, however hard they work, all get fat when the sugar cane is ripe, because they are allowed any amount of the sweet sugar cane to chew at that time.

"Tissue-foods" are furnished by albuminoids which are found in the flesh of animals, as beef, veal, mutton, lamb, or pork, or the flesh of hares, rabbits, fowls of all kinds, and fish. They are also found as albumen in eggs of all kinds—the eggs of birds, the roe of fishes, as cod's roe, *caviare* made from the roe of the sturgeon, the roe of the herring, &c.; as caseine in milk, cheese, peas, and

beans, haricot, and other pulses, as lentils. The Chinese make a cheese from peas.

In our ordinary preparation of food we combine the two forms of food together. Thus we eat meat and potatoes, bread and cheese, or suet puddings, as the case may be. Bread and cheese and butter represent a combination of the chief elements of food. Thus there is starch and *gluten* (a vegetable form of albumen) in the bread ; caseine in the cheese if a poor one, with some fat if a rich one ; and fat in the butter. Meat, fat and lean together, with potatoes, form a similar combination of food. In the latter there are certain salts which are good against scurvy. When poor persons are compelled to live on bread and cheese and butter, they should eat a vegetable therewith, as an apple or an onion. Onions can be got when apples are out of season. Then there are vegetables, as cabbage, cauliflowers, broccoli, "greens" of all kinds, which have some food value of their own, but are mainly used with meat to cke it out.

Now let us trace the food when taken into the mouth. Whatever we eat has to be dissolved, that is, brought into a liquid state. *All digestion is solution*, so that the food may find its way from the intestinal canal into the blood. We cook our food because that renders it more pleasant to the taste, and more easily chewed. We grind our corn for the same reason. When, then, our food is taken into the mouth it is chewed, or *masti-*

cated ; it is rolled over by the tongue, thrust between the teeth, chewed again, and then swallowed.

What has gone on in this process in the mouth ? The food has been chewed so that it falls readily to pieces in the stomach. Food not properly chewed, either from haste in eating, or from bad teeth, does not digest easily in the stomach, because it does not come to pieces readily ; the stomach rolls it over and over almost in vain, and then we have pain produced after food, known as indigestion. Further, the saliva converts the starch of the food into sugar, which is soluble, and so finds its way into the blood. Starch, then, is digested in the act of mastication.

When the food is swallowed down the *æso-phagus*, or gullet, it reaches the stomach. Here is further digestion. The chewed meat is rolled over and over by the stomach, while an acid fluid (the gastric juice) is poured out and mixed with it until it is all reduced to a pulp. This juice will digest little bits of hard-boiled egg, or bits of cooked meat (muscle), in a glass, if kept warm at the body heat. After a time the food is allowed to pass out of the stomach into the intestines, where it becomes mixed with bile and the secretion of the *pancreas*, or sweetbread. Here starch is once more changed into sugar, the digestion of albuminoids is continued, while the fat is *emulsionized*, that is, broken up into minute particles. Here, in the small intestines, the process of absorp-

tion of the digested food into the blood takes place. Thus the blood is fed from the food we eat, the waste matter being cast out by the bowels.

Now let us trace the onward progress of the food in the blood.

The sugar is stored up in the liver from each meal, and given off into the blood again as required ; if it were not for this arrangement we should always be eating or starving. When given back to the blood it unites with the oxygen in the air we breathe, and is burned by oxidation into carbonic acid and water ; producing in its combustion body heat and force. Fat is also burned in the body. In cold climates much fat is required to keep up the body heat. The Esquimaux eat many pounds of whale blubber, or of seal fat, in the twenty-four hours, to keep them warm ; while in the tropics a dietary of fruit is quite enough to maintain the body heat.

The body heat in starvation is kept up by the burning of the fat stored in the body, and death soon follows hunger in cold climates. When the food is not enough the stored material is burnt, and so we waste, or grow thin.

The digested albuminoids pass into the blood to be used for the growth and repair of the muscles, the skin, the blood vessels, the brain and nerves, and the ligaments and bones. These last also require lime, especially in the early years of growth. The blood corpuscles, little tiny bodies in the blood which carry the respired oxygen

from the lungs all over the body, also are built up from the albuminoids.

Thus we see that all digestion is a process of solution by which the nutritive material of our food is conveyed into the blood through the walls of the intestines. For this a great deal of water is required. Water is the means by which waste is washed out of the body. Indeed, a large portion of the body is water—over 80 per cent., or eight-tenths. As hunger compels us to eat food, so thirst compels us to drink water, when the amount of water in the body is too small for its comfort. We die of thirst much sooner than of hunger.

Now when people talk of food containing nourishment we must ask them what they wish to nourish. If the child is well, but thin, they probably wish to increase the fat ; if it is rickety they desire to nourish its soft bones ; if its muscles are wasted they wish to increase their bulk. For the first end they give sugar and fat, especially cod-liver oil ; for the second, lime in some form ; for the last, they feed it upon meat. When its blood is poor they give it iron to help to build up the blood corpuscles. Thus we see we must know exactly what we mean when we speak of food as nourishing.

Many persons think beef-tea the most nourishing thing in the world. Its food-value is very low, and a person would soon starve on beef-tea alone. Milk, however, is a perfect food when not

deprived of its cream, and on milk alone the baby lives and grows for months ; and grown-up persons can live on milk quite well, provided they can get it. Beef-tea is made much more nourishing if some baked flour, as Ridge's food, be stirred into it ; or a teaspoonful of cream. Milk boiled with a little corn-flour, only a little, so as not to thicken it too much, is far more nutritious than beef-tea, however strong it may be made. For sick people and invalids a milk diet is the best ; if it returns curdled, add a little chalk powdered, or magnesia in powder—not the “effervescing citrate” of magnesia.

Such, then, are the foods which are required for the proper nourishment of the tissues of the body. Now you are going to be told in a few words what is *not* proper as a dietary. Tea with a little sugar, a piece of white wheaten bread, and a little bit of herring or other dried fish, is a common breakfast in a workman's house. It is easily prepared ; but it is not sufficient for the wants of the body. A great deal of the dwarfing of town-reared persons, compared to country-bred persons, lies in this insufficient food. The body is badly nourished and so growth is early arrested ; the individual remaining permanently undersized. The truth of this has been shown in the manufacturing districts of the North of England ; and the addition of some milk to the breakfast and supper has been found to produce most satisfactory results.

Milk boiled with "hominy" which has been soaking overnight in water, makes a capital breakfast, with a piece of bread. If a piece of fried bacon can also be procured it is well. The liquid fat can be eaten by dipping a piece of bread into it, by those who cannot digest the solid bacon. Then at dinner a piece of fairly fat meat cut in pieces and stewed in a pan, with an onion or two, makes a good meal. But such a "hash" should never be made with cold meat, for such a hash is very indigestible however toothsome; and no one with a delicate stomach can eat such a "hash" without suffering afterwards. Where there are children a milk-pudding, made with hominy, rice, or sago should always be part of the dinner. Milk is now more easily got in towns even than in the country. An egg added to the milk-pudding makes it a good substitute for meat. Cheese should always be well chewed, else it is indigestible. Bread and cheese, after a soup made with lentils, is a sufficient meal for ordinary persons, and is cheap enough to be within the reach of all.

DOMESTIC ECONOMY.

Part III.

SECTION I.

RULES FOR HEALTH: THE MANAGEMENT OF A SICK ROOM, &c.

CHAPTER I.

HEALTH.

YOU have now arrived at the last part of the subject of Domestic Economy, which will deal with more purely personal matters. You have been told how to do your domestic work ; you are now to be told how to take care of your own health, and your worldly interests.

The first matter then is the care of your health ; a very important affair for those who either have to earn a living themselves, or to assist those who have to do so. Health is of the very greatest moment to those who must work. An employer very naturally hesitates to engage workpeople who may be kept at home in a busy time because of

their health, or rather the want of it. Not only so, but there is the direct loss of earnings ; and the indirect loss by the expense of the doctor's bill, and other matters. No one in the present struggle for existence, and even in the race for wealth can afford to be ill. People of independent means alone can do so ; and to them it is unsatisfactory in every way. So above all things preserve your health to the utmost.

Now you will naturally wish to know how this is to be done, and so far as is possible this shall be told you ; only space forbids anything beyond brief statements.

As a child, be careful about what you eat. Be moderate and do not indulge because what is before you is nice or toothsome. Eat up one article of food completely before you ask for another. A clean plate is a satisfactory sight, and tells of thrift. Do not crave for tea, or the indulgences of your elders, many of which are unwise, or in excess of their real needs. Simple diet will not tempt you to indulgence.

Above all things try to eat fat. It is considered by children at present "the right thing" to reject fat. Certainly some delicate children cannot take fat, and so leave it on their plate. But for those who are well and really can take it, it is very silly and foolish to pretend not to be able to eat fat. A really delicate child who cannot eat fat, should have an extra quantity of butter instead. But, remember, butter is costly.

Plenty of bread and milk, plain or boiled, should be given to children as their food ; with some meat and vegetables once a day.

It is a great pity that some fruit is not given to children every day ; if this were done it would be very good for them, and if they were accustomed to sound fruit they would not indulge in unripe or unsound fruit, as they do now. Children will, as a rule, eat greedily any fruit that they can lay hands on, because they so rarely get any. They make themselves ill, and their mother says, "Fruit is not good for you." What ought to be said is, "Bad fruit is not good for you ; especially when you eat too much of it at once." If chosen according to the season fruit is not too dear to be eaten most of the year.

Then do not stay out late in the evening. Even if, from having other things to attend to, your mother forgets to get you to bed soon, go in home ; no good comes from being out late, either in town or country ; it generally leads to mischief in some form. It is not good for your physical health ; and assuredly it is not desirable for your moral health.

Then go to bed early, so that you will be refreshed and ready to get up soon in the morning. A bedroom should not be too close, and should allow enough of air for each person. Each child should have a cubic space of 130 feet at least for health ; but this is not always attainable. Now remember not only is proper ventilation a

question of "space," but also of "renewal" of air. If the room is large it is not necessary to change the air very often ; but where the room is small, or there are several in it, then the air ought to be changed several times in the hour. Especially desirable is it to secure a fair supply of fresh air at nights for town populations, who commonly work all day in ill-ventilated rooms, or sheds. Even with better food and clothes, the mill-hand of our manufacturing towns will not compare in bodily condition with the agricultural labourer ; and why ? Because the agricultural labourer is out all day in the fresh air, while the mill-hand is toiling in a close, ill-ventilated atmosphere a great many hours every day. It is then all the more necessary for town populations to have a good supply of oxygen, that is of fresh air in their bedrooms. So, unless it is very cold, always have the window of your bedroom open at least a tiny bit ; if possible at the top. Make a point of this. If any stench outside render this impossible either change your residence, or call in the inspector to have it removed.

Now as to bed clothes. Remember it is colder in the nights than the day ; and when the days are very sunny in spring and autumn they are apt to be accompanied by cold, even frosty nights. So, though the day-clothes may be thin without harm, the night-clothes must be warm. The winter blankets should be kept available for clear starlight nights up to May ; and again for the later

weeks of September. Some throw their day-clothes on the bed at night ; but this is undesirable and can only be excused by dire poverty.

Then as to day-clothes ; in England we have such sudden changes of weather and temperature that it is much more difficult to follow them than in countries where the changes are more regular. Still a more systematic attempt might be made to follow them than is the case. For instance a cloak might be worn in early morning and in the evening, even if left at home in the mid-day, by many girls and women.

Women are often insufficiently clad generally : while almost all neglect to cover the top of their lungs, and have nothing under their dress but a corset and a chemise. Thus the top of the chest is left very unprotected, and all should wear a piece of flannel, a sort of cape, under the dress, to cover the shoulders and chest. I say "should:" but when I shall be able to write "do" wear such a garment, it seems difficult to say. Delicate girls and women should wear merino shirts with arms, and drawers of the same material in cold weather. The matter of underclothing is grossly neglected by the female sex, who are at the same time so particular about their outer garments. It is sad to think how many women pay the penalty for this neglect in ill-health, not rarely terminating in death. A flannel "body" fitting close up to the neck ought to be worn by all females in cold weather ; and flannel drawers, fastening below the

knee, are equally desirable in the interests of health.

The feet in women and girls are very commonly neglected more than the rest of the body. Their shoes and boots are almost always too thin, and made of bad material; so that the feet are damp and cold. In a workman's household there is rarely enough of money to spare for good sound shoes for the female part of it; the more's the pity! In such cases it would be well to secure fairly good boots and shoes by weekly payments. If they cost more to start with, they wear longer, and so are as cheap in the end; to say nothing of the comfort and the avoidance of colds and illness secured thereby. Even if good boots and shoes cannot be purchased, such as you have ought to be mended when necessary; and not be worn when in holes. Neat shoes are a great ornament to any woman or girl. Stockings should be warm and comfortable, and be well-darned; and not be fastened by a tight garter below the knee, as this is a common cause of enlarged veins in the legs. Darning is now taught very well in most girls' schools; and girls now can darn much better than their mothers ever could. Always have your clothes as clean as possible. Do not wear your underclothing too long, that is unwholesome. When your skirts are dirty with mud and splashes from the streets, always brush them clean as soon as they are dry. It looks very badly to wear unbrushed clothes all spotted with dirt.

“Cleanliness is next to godliness,” and it is very wrong, as well as unhealthy to be uncleanly. It is not enough to wash the hands and face, the parts that are seen ; a proper-minded girl will like to feel that those portions of her person which are not seen, are also clean and well-washed. The skin is a useful organ and liberally provided with sweat glands, so that an insensible or unperceived perspiration is always going on. When the weather is hot, or you are warm with work, then the skin is bathed in sweat. When the skin is neglected and insufficiently washed the “pores,” as the mouths of these sweat glands are called, get choked, and so the skin cannot act properly. When the underclothing is saturated with sweat it is sour and unwholesome, and should be changed. Always take care at least once a week to wash the body all over carefully with soap and warm water, even in cold weather. Having washed yourself quite clean, rub yourself thoroughly dry. In doing so you remove the dead outer skin or cuticle, and so leave the acting skin unimpeded in its work.

Now comes another question, also an important one, namely “exercise.” What betwixt learning your lessons, and helping mother at home, you will have little time for exercise or play. Play is proper, it is healthful, and is desirable ; avoiding rough “tom-boyish” ways. Boys are allowed to play freely ; and girls ought to know how to run, and skip, and play at out-door games,

just as much as boys. They should too have a good walk of several miles on Saturday afternoons and other holidays. A walk in the country in the fresh air is better than sitting poring over books, and all girls should strive to get such a walk every week, whenever the weather will permit of it. It is much better to save up the pennies for such a walk than to put them by in order to go to a theatre.

In your school grounds now you can play and swing. It is very good for the chest to hang by the arms, such exercise tends to develop it; and that is a grand protection against consumption in after years. It is well to swing until the exertion tests the wind in the school days, and to have a brisk walk on the Saturday, fast enough to try the wind. Young men often play wind instruments to bring out or develop their chest; but girls have nothing of the kind. Yet such exercise is quite as necessary for them as for boys. Girls, too, sit over their sewing, their books, or their writing, with their shoulders thrown forward and their backs arched. This attitude is very bad for them, and prevents the development of the chest. A girl should aspire to be a good runner, walker, and skipper, as well as to know her lessons. The preservation of the health has been terribly neglected in female education of late years; but its importance is now being more clearly recognised. Remember, without health there can be no enjoyment of life; while health is essential to labour.

Where a girl is not strong, or is delicate, it is necessary for her to think of how to get a living. She must work at her books to get a living by her brains if possible; for hard bodily work she cannot do. But this makes it all the more necessary that she take every care of her health. She should be very particular about regular exercise, as well as the other matters discussed in this chapter. But the strongest girls should also take care to preserve their health. Health is requisite for labour, and the health of the "working classes" is quite essential to their prosperity.

CHAPTER II.

THE MANAGEMENT OF A SICK ROOM.

THIS is a matter which cannot be overlooked. Sickness at some time or other is the lot of all. Few children escape measles, or scarlatina, and whooping-cough; while typhoid fever is sadly common at all ages of life.

It is very desirable that every girl should know how to regulate the management of a sick room; what to do for the patient; what to do to lessen the risk for others when the illness is an infectious disease.* Persons with limited means cannot afford

* A little book has recently been published on "Home Nursing," by Dr. Lionel Weatherley; but it is written for grown-up persons, not for little girls. What follows here is an abstract of it.

trained nurses, it is quite enough to have to pay the doctor's bill. So the poor must in sickness help each other, as they always very cheerfully do—to their credit be it spoken !

I will try to give you a few simple directions which may be helpful. Select the best room in the house, if it can be got. Let it be well lighted, and let the bed stand so that it is not in the way of draughts ; and yet so that you can easily get to it. By not having the bed in a draught you can keep the room safely ventilated—a great matter. Let the room be placed so as to be as free from outside noise as you can ; and keep the house as quiet as possible. If it contains a fireplace all the better ; if not keep the windows partially open, (for hours in summer, for a few minutes daily in winter), two or three times in the twenty-four hours. If there is a fireplace the fire will usually ventilate the room ; still, even then the windows ought to be opened at times.

If the bed is a four-poster remove the curtains or valance. Do not let the patient lie on a feather bed, but rather on a hair mattress. See that the pillows are placed so as to make the patient comfortable. In certain cases a “draw sheet” is necessary.

Then if the case is an infectious one, remove all articles of furniture not absolutely required, so as to lessen the risk of conveying infection thereby. Also, in this case, keep some Condyl's fluid in a saucer and sprinkle some every two or three hours

over the floor, the carpet having been removed. Then if it is a typhoid fever case remove the stools out of the room at once. Keep a sheet wet with a solution of carbolic acid over the door. If it is measles or scarlatina, keep the room well ventilated while the rash is coming out; after that when it is declining take care to avoid cold. It is during their later stages that these ailments possess the greatest infecting power. The same is true of small-pox.

Then there are some points to be attended to by the nurse. She must keep her eyes and ears open; and her mouth shut. When it becomes necessary to speak, do not attempt a whisper. A whisper disturbs a sick person, whether asleep or awake, much more than the ordinary voice. If the patients are dozing disturb them as little as possible. When you bring them food, let it be just what they can take at once. All food, and drink, and fruit, &c., acquire a taint if left in the sick room. What is not taken at once should be removed out of the room. Then ice should be kept wrapped up in a piece of flannel in the coolest place in the house, and a chip or two knocked off when required. Never cook anything in a sick room; though you may warm food sometimes, as in the night, if you look sharp about it.

Keep a light step, and a light hand; a cheerful temper and a cheery voice, even when you feel it very hard to do so. Never look depressed, or allow gloomy, or unhappy-minded persons to come near

a sick person. They are enough to extinguish the flame of life when it is low or flickering. If they cannot be cheerful, let them stay away.

Follow out the orders of the doctor carefully and obediently. Give the medicine and food as ordered. When he is giving directions listen attentively ; do not give apparent heed to what he is saying, waiting till he is done to tell him something. This is a natural mistake, but a grand one. If necessary, put down on paper what you have to say, and read it to him. But above all things listen to what he has to say when in the room ; you cannot ask him when he is gone, however you may wish to do so. Note everything ; tell him clearly, and then attend to what he has to say in turn.

Do not be led away to do something told you by a neighbour or a visitor without speaking to the doctor about it. If any stimulants are ordered give the precise amount stated, and no more.

When persons are confined to bed without being dangerously ill, they like to see company. But never stay till they are tired, or allow visitors to stay. Persons confined to bed are more interested in what is going on in the house, than outside it. So do not talk much about outside matters, which perhaps interest yourself ; but about what will interest them.

When sick persons are getting out of bed, do not urge them to stay up till they are weary. For the first day or two get them up with a blan-

ket or two around them ; it tires them to be dressed. Then when up and dressed, do not let them stay up too long ; else they get very weary when undressed. If they are too tired they think the “ getting up ” does them no good ; and they are not far wrong. Let them get back to bed without being fatigued ; and the same rule holds good when they can get down-stairs.

As soon as may be, clean the room thoroughly. Take out all the furniture, scrub the floor, wash the doors and paintwork, and rub the paper, so as to clean all well. Then burn some sulphur in the room, and close it up for some hours. After that the things can be replaced in the room.

Be clean, neat, and nice yourself, as far as you possibly can. Be careful to get some sleep when possible. A tired nurse is apt to grow careless without intending it, simply from fatigue.

SECTION II.

FOOD.—ITS PREPARATION.

CHAPTER I.

IMPORTANCE OF COOKERY.

ONE of the chief causes of ill-health, not only amongst the poor, but amongst the rich, is want of proper food. Even those who eat too much may

remain unfed because they eat wrong kinds of food, or badly cooked food. Good health depends largely on good food. But much care is needed in the selection and preparation of the food for eating. Food is cooked to render it more digestible ; but the cookery must be good, and suited to the kind of food prepared.

Englishwomen have found out of late years that they may learn something in this respect from their continental neighbours. By the working classes especially, there is much still to be learned. Wrong kinds of food are often bought, expensive joints are sought after, rather than cheaper fare. These errors are frequently the result of ignorance or prejudice ; but sometimes, I fear, indifference or laziness is the cause.

In these days girls have many chances of learning to cook, such as their mothers did not possess. There are cookery classes in various parts of London and other towns, where special instruction may be had in preparing plain, cheap, and wholesome dishes. Lessons on food and its preparation are given in most elementary schools, while numerous books of *recipes* are published. There is, therefore, no reason why you should grow up to womanhood ignorant of what to buy, and how to cook it.

The choice and cooking of food is the business of the housewife, who should buy the best things she can afford ; and study how to prepare what she purchases in a tasty manner, yet so as to draw

from it the greatest amount of nourishment for the money expended.

A good housewife will first decide how much money she can allow during the week for food, for that will affect both the kind and amount to be bought. She will next consider, so far as she knows how, the character of the food required by her family. If her husband is a labourer or a mechanic, he must have as much substantial food as she can give him. If she has young children, she will provide for them plenty of light easily-digested food, containing a fair proportion of "tissue food." There is no objection to *coarse* food if it is fresh and wholesome. Never be tempted, for the sake of apparent cheapness, to buy tainted meat or fish, stale vegetables, badly-baked bread, or adulterated tea and sugar. They are not worth the money, cheap as they seem ; and possibly will do a real injury to your health. Even when the income will allow of it, prime joints of beef and mutton will scarcely form a substantial part of the daily fare. Where economy must be practised, coarser and cheaper food must be bought. Soups and stews with a plentiful supply of vegetables, especially potatoes, will be frequent dishes at the dinner table. There are also many nutritious wholesome puddings, costing little and easily made, which may form a large share of the children's dinner with advantage.

Hot dinners are better, because more digestible

and comforting than cold ones, especially in cold weather. You know how much nicer it is to go home from school on a cold winter's day to enjoy a warm basin of soup than to stay at school and "make do" with bread and cheese. Mothers are often tempted, when they are busy, to make the mid-day meal consist of cold meat bought from the nearest cook-shop, or a piece of cheese, or a slice of fried bacon in addition to bread and a cup of tea. But this is poor management in every sense. It is expensive in proportion to its nourishment. Let me recommend you, girls, when you are in charge of a home, to adopt the French style of having what is called a *pot-au-feu*, that is, a pot or saucepan by the fire. Into this you can put bones, gristle, odds and ends of meat and vegetables with water, or the liquor in which meat has been boiled. Always slowly and gently simmering, not boiling, it forms at any time the foundation of a nourishing dinner. Potatoes, or even a slice of bread with some of the contents of this stewing pan, will be a far better dinner than any such poor makeshifts as those just mentioned.

In towns and villages near the sea, or easily connected with it by rail, fish can often be bought at a cheap rate. It is not so nutritious as flesh meat, bulk for bulk, because it is more watery, and is less satisfying to strong hard-working people. But even for children, and for those who do work hard, one fish dinner in every week makes a nice change. Eggs are nourishing and digestible if

lightly boiled, but they are only cheap enough to be economical in summer. Milk is so valuable an article of diet that a plentiful use should be made of it for puddings, as well as for drinking.

Dinner is not, however, the only meal to be provided for. Morning and evening, in preparation for the day's work and for refreshment after it, come the lighter meals, breakfast and tea as we term them. Plenty of milk and water for the children, and tea, coffee, or cocoa for their elders, with wholesome bread and butter, is the general fare for these times. If she can afford it, the good housewife gladly has ready a slice of bacon, a piece of fish—herring, sprat, or mackerel—or other little relish for her hard-working husband. If not, she is content to have well baked bread made from good coarse flour. When good butter is beyond the reach of the purse, it is better to use dripping than some of the rank, unwholesome stuff sold as cheap butter.

English children, particularly those bred in towns, have a dislike to oatmeal porridge. But their little Scotch friends would terribly miss their morning meal of porridge and milk, or treacle. It is, perhaps, the best breakfast possible for children. Our pale-faced London children would be far better if in early life they were accustomed to it, or hominy porridge. Water, which is the best drink you can have, is often impure in our towns, and therefore unfit for drinking purposes. It needs filtering in order to cleanse

it. Filters are sold very cheaply, and, considering their great utility, they soon repay their cost in most households. Do not begin, girls, to take sips of beer or spirits. You do not require them, they will do you no good ; and you may possibly be laying the foundation of a bad habit, which has ruined many a girl full of promise.

CHAPTER II.

METHODS OF COOKING.

IN the previous chapter you have seen that it is necessary our food should be cooked ; that all food will not bear the same kind of cooking ; and that upon the care and skill of the cook depend much of our health and comfort.

Cooking requires heat. Heat changes the character of food. You know the difference between the white of an egg before, and after it is cooked ; and between raw meat, and the same well stewed.

The different ways by which we apply heat to food, in order to cook it, are *roasting*, *baking*, *broiling*, *frying*, *boiling*, and *stewing*.

Roasting consists in exposing to the fire the meat to be cooked. It is only fitted for poultry and for large joints. Lean, thin, or coarse parts of meat would be quite spoiled by roasting. The joint should be hung before a clear fire, and frequently basted with fat from the dripping-pan.

In order to retain the juices the meat should be put close to the fire for a short time to harden the outside, and so prevent the escape of the juices. Afterwards it should be drawn back and cooked more slowly. About fifteen minutes for every pound of meat will be required ; so that a sirloin of beef weighing eight pounds will take at least two hours to roast. The fat from the joint makes good dripping. All roasting is expensive.

Baking is somewhat similar to roasting. The food is put into an oven, which should have an opening to allow the steam to escape ; else the food becomes sodden. Care must be taken that the fat is not burnt, or a disagreeable flavour is imparted to the food. The advantages of baking are that it needs less attention than roasting ; and if it is well done, there is no great difference between a roasted and a baked joint. Bread and pastry are always baked in the oven. Many kinds of fish are better baked than boiled.

Broiling is cooking over, or before the fire on a gridiron. It is suited for fleshy tender steaks, and chops ; but it requires the greatest skill and care, else the fat is burnt and the meat spoilt. When any girl can broil a steak well and serve it up with nicely cooked potatoes, she has gone a good way towards becoming a really good cook.

Frying is the most common, because the most rapid means of cooking, amongst those who have little time to spare. As generally performed it is wasteful and objectionable. Wasteful, because

the food is made tough and much of its nutritive value lost ; objectionable, because a disagreeable flavour is given to the food. But this is due to the small quantity of fat used, and the excessive amount of heat applied. If you use a deep pan, put in enough fat to quite *cover* the food, and carefully prevent overheating, you may thus turn out your meat or fish fried of a delicate golden brown, tender and digestible. Nor is there any extravagance in using so much fat, for it can be saved and used again and again.

Boiling is cooking with water in a saucepan over the fire. It is more economical than the methods above mentioned. It requires little attention and only a small fire. There is less loss of weight in meat by boiling than by roasting, and the liquor makes good soup or broth. Many kinds of fish and puddings, as well as most vegetables, are cooked by boiling. If meat is boiled to make soup, it is put into cold water, brought slowly to the boiling point ; and then drawn back to cook very slowly, till done. But if it is desired to boil the meat specially for eating, it is plunged into boiling water, boiled quickly for a quarter of an hour ; for the same reason that a joint being roasted is put close to the fire at first, and then cooked more slowly till tender. In this case the liquor is poor, because the nourishment has been kept in the meat.

Excepting old potatoes which are put into cold water and cooked slowly, most vegetables must

be well washed, and put into boiling water with a little salt; and kept sharply boiling until tender.

Fish should be laid in enough cold water to cover it, with a tea-spoonful of salt to every quart of water, brought to the boil slowly; and simmered for about 8 minutes.

You may add to the liquor in which meat has been boiled, any kind of vegetables in season, some rice, pearl barley, or split peas to make soup.

Stewing, which consists in gently cooking meat, fish, and vegetables in very little water, and by a moderate heat, is really the best mode of cooking for the poor. Tough, sinewy joints of coarse meat, as well as many of the internal parts of animals, such as the liver and heart, which are sold at a cheap rate, may so be made tender and pleasant to the taste. Stewing is, too, the only way in which the goodness can be drawn from bones and meat trimmings. The one thing absolutely necessary to remember, is that a stew cannot be quickly prepared. From 8 to 12 hours is not too long a time. An earthenware jar with a close-fitting lid, in which the meat can be put with very little water, makes an excellent stew-pan. It can be allowed to stay in a slow oven, or by the side of the fire. Vegetables should be boiled before adding them to the stew, because they need rapid cooking. The time required for stewing causes the housewife to make stews with meat already cooked. This is the besetting sin of British cookery among the artisan classes. It is

not denied that a stew so made may be toothsome; but certainly it is only digestible by the strongest digestive organs. Such stews and hashes are difficult of digestion, and quite upset persons whose digestion is not good. For dyspeptics, stews so prepared are most undesirable, and they can only digest stews made with fresh meat.

CHAPTER III.

BOILING VEGETABLES.

MUCH care is needed in preparing and boiling vegetables, or there will be much waste. They must be well washed in cold water, to which salt is added for all kinds of greens, to free them from insects, and well drained in a colander before boiling. If not boiled till they become tender, vegetables are not nourishing or digestible; if too much boiled they are heavy and tasteless.

Cauliflower and broccoli must be put into boiling water, with about a dessert-spoonful of salt to a quart of water, boiled till tender, drained and served with melted butter.

Spinach, being very watery in itself, will only need half a pint of water to a large saucepanful of the vegetable. It soon shrinks, and the water is drawn out. Some people merely drain it and so send it to table; but, properly, it should be

drained, chopped fine, mixed with butter, salt and pepper, and served on a very hot dish.

All other greens are boiled quickly in plenty of salt water with a little soda, drained and well pressed, and served plainly.

French and scarlet beans must have their stalks and any stringy edges removed, cut in long thin strips, and boiled quickly in salt water without soda.

Broad beans and green peas should be shelled and boiled like scarlet beans. For peas add a few leaves of mint, and if old a very little soda. Haricot beans, which are very useful when potatoes are old, bad, and dear, require soaking all night. Unlike fresh vegetables, they have to be put into cold water, brought to boiling point and simmered till quite soft. They take a long time to cook. Being very dry in themselves a piece of butter shaken amongst them, when they are drained, improves them.

Turnips, carrots, and parsnips may be boiled with the meat with which they are eaten, if the flavour thus given to the meat is not disliked. Parsnips give a very strong taste. Turnips want thickly paring, carrots and parsnips scraping, and all of them may be cut into two or four pieces. Turnips are usually mashed, when tender, with the addition of salt, pepper, and butter.

Onions, peeled and well boiled, can be served whole with boiled mutton, or mashed for a winter supper, or chopped and added to melted butter for roast mutton.

Potatoes may be boiled with or without their skins, the former being the more economical. If peeled, care should be taken to pare thinly. Girls are often very wasteful in this respect. New potatoes must only be scraped, washed, and put into boiling water with salt and mint. Old potatoes are put into cold water, made to boil quickly, then simmered till nearly done ; when they may be drained and covered with a perfectly clean white cloth until wanted. They *should* look like balls of flour.

SECTION III.

INCOME AND EXPENDITURE.

CHAPTER I.

SPENDING AND SAVING.

“ I HAVE no money ! ” is a frequent cry. Well, of what consequence is it if you have no money ? What would money do for you ? I suppose you have no difficulty in answering the question, for you know it will provide the necessities and luxuries of life. Where is this money to come from ? It must be earned. At present your parents earn it for you ; but by-and-by you will have to earn it for yourselves. Some school girls are able to earn a little in their spare time by needlework, by going errands, or by doing some little housework within their power. Whatever is

paid for work done is called "wages." Suppose that when you do some work for a neighbour she gives you in return your dinner, or some articles of dress, would this meal or garment be wages? Yes, certainly. A coachman living in his master's house, and having food and lodging provided for him, receives much less money than one who has to find everything for himself. In the first case the food and lodging would form part of the man's wages. It would not, however, be convenient for your fathers to receive goods in payment for their work. Coin is a great convenience, because it can be given in exchange for all we need for our use.

It is certainly important to know how to earn money; but it is equally important to know how to spend it well. People who care only for the present live up to their income, that is, they spend all their money as they get it; sometimes they even live beyond their income, that is, they owe more than they can pay. When sickness or death brings additional expenses, or cuts off the breadwinner, such people are plunged into poverty and distress. When old age comes on them they are obliged to depend on others, or the charity of friends, or the benevolent; or the miserable pittance of the parish. If they have lived beyond their income they need not wait for sickness or old age; for, as they cannot pay their debts, they soon bring ruin on themselves and defraud others of their rightful due.

But, on the other hand, they who look to the future exercise a prudent self-denial and make some provision for the time when they can no longer earn a living. These people begin early to create for themselves a "reserve fund," by regularly saving a portion of their wages. Perhaps you think this is very difficult, even impossible, for most working people. Difficult, I will grant you, it is ; unless the habit has been acquired in youth and practised through life. The apparent impossibility, which may occur to you, is probably due to the fact that comparatively so few lay up anything for "a rainy day."

"Ah ! yes," said a girl, after listening to some advice, "I shall begin to save when I am a woman." There she made a common, but great mistake. The time to begin to save is now ; while you are young, and *before* you are women. Suppose you earn, or have given to you, a penny a week. If you spend it in sweets or fruit, you will obtain a passing pleasure of taste, which you can well enough do without. If you save it you will find yourself, at the end of a year, the possessor of 4s. 4d. ; which you can use to some real advantage.

It is in order to encourage the habit of saving that so many schools have a "Penny Bank." The Post Office helps you also. Any child may get at the Post Office a piece of paper with spaces marked for twelve postage stamps. When she has a penny she can buy a stamp and fix it on the paper. When the spaces are filled, she can take the paper

to the Post Office, and have her name put down as the owner of one shilling deposited. Then she can save another twelve stamps, and go on adding to her store.

Let us see now what must be considered in deciding how the weekly income should be spent ; for, although the husband is generally, and rightly so, the money-earner, the wife is commonly the money-spender, and it is nearly always in her power, either directly or indirectly, to save. *Directly* she can save by her economy in household matters ; and *indirectly*, by bringing her influence to bear on her husband.

The great use of money is to provide us with food, clothing, and shelter. These we cannot do without, for they are the absolute necessities of life. A large part of the income must be devoted to them. Living costs more in the town than in the country ; but wages are generally higher in towns. A second part of the income may be set apart for those things which, not being necessary for existence, are termed luxuries. It is in the purchase of luxuries that economy can be best exercised. For instance, a sleeping room is a necessity, a parlour is a luxury ; bread is a necessity, beer and tobacco are luxuries.

A third portion of the income must be put aside for a *reserve fund*, that is, savings to provide for sickness, old age, and death.

A mechanic in a town earns on an average 30s. a week.

Keeping in mind the necessity of living within his income and saving a little, we shall probably find his weekly expenditure will be somewhat after this manner :—

	<i>s.</i>	<i>d.</i>		<i>s.</i>	<i>d.</i>
House Rent	6	0	Firing	1	6
Food	14	0	Sundries	1	0
Clothing and Education	6	6	Savings	1	0
				<u>30</u>	<u>0</u>

A working man in the country would earn less and live more cheaply. Say his wages were 20s. a week. Then his expenditure would stand thus :

	<i>s.</i>	<i>d.</i>		<i>s.</i>	<i>d.</i>
House Rent	3	0	Firing	1	0
Food	10	0	Sundries	1	0
Clothing and Education	4	6	Savings	0	6
				<u>20</u>	<u>0</u>

CHAPTER II.

THE RESERVE FUND ; OR, WHAT TO DO WITH SAVINGS.

LET us now imagine that you start well, resolving to cultivate a spirit of self-denial, and to exercise such a strict economy, that you have always a little portion to save regularly. What will you do with it? If you keep it by you it may “burn a hole in your pocket,” that is, you will be constantly tempted to spend it. It should, then, be put away where it will be safe ; but not quite so easy to get at as if it were in your drawer, or box. There are many banks in which money

may be deposited ; but perhaps the most convenient for small depositors is the Post Office Savings' Bank, already mentioned, in which you may put at one time, any sum between one shilling and thirty pounds. You have already seen how you may save your pennies to make a shilling. In many schools there are Penny Banks, often connected with the Post Office, where you may keep your pennies until, having a larger amount, you can transfer it to the Post Office. In all banks you get interest for your money ; that is, the bank authorities give you a small amount for having the use of your money.

But do you think you are likely by this means to save enough for your future wants ? It is very unlikely. If you saved one shilling a week for forty years you would not have much more than £120 ; and that would not keep you very long.

You have probably heard of clubs. Some are connected with a particular trade, others are open to all who choose to join. Some give help in sickness ; others pay funeral expenses ; while others again combine the two. A general name given to all such societies, is " Friendly Societies." It is a good name ; for help in time of trouble is true friendship.

A man is often anxious to insure to his family, in case of his early death, a sum of money to enable them to start in some business, which will save them from the parish. He therefore " insures his life," *i.e.* he buys the right to a certain

sum of money, payable at his death. To do this all at once would be impossible to him, because it would cost so much. But by paying a small amount yearly or monthly he can manage it. Thus a young man of twenty could make sure of having £100 paid to his family after his death by paying £1 16s. 2d. a year to an insurance society. In the Post Office so low a sum as £20 can be insured in this way.

But sick, burial, or trade clubs, and life insurances do not usually provide for old age. In order to make such a provision, some persons join building societies, and become, by degrees, owners of house property; the rents of which form, by-and-by, a little income for them. Others buy an *annuity*; they pay regularly through life a certain sum which purchases for them the right to a small income, which will be paid yearly as soon as the age agreed upon is reached. This is called a *deferred annuity*; deferred, you know, means "put off."

Some societies, based on unsound principles, or badly conducted, fail when members most require their aid. You must therefore exercise great care in your choice, and seek the advice of some disinterested and competent judge, in deciding in what to insure.





